



## Research Paper

# Changes and trends in arrival and prices of agricultural commodities in APMC Kolhapur market

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**ABSTRACT :** The study of APMC, Kolhapur revealed that, the open auction method of sale was strictly followed in the market, the overall conduct and law and administrative promptness was seen satisfactory. The analysis of trends in arrivals and prices revealed that, arrivals of paddy, groundnut, onion, potato and jaggery had showed fluctuations yearly during the period under study (2001-02 to 2011-12) but only arrivals of wheat decreased in period under study. The prices of all commodities were found to be increased over entire period.

**KEY WORDS:** Trends, CGR, Arrivals, Prices, APMC

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## INTRODUCTION :

The price fluctuations in agricultural commodities is a common phenomenon due to their seasonal nature of production, wide ecological imbalances compared to other crops and seasonal demand for agricultural commodities. Agriculture is characterized by wide variations in the output of crops which subsequently lead to larger variation in market arrivals. Fluctuations in market arrivals largely contribute to price instability and price fluctuations of agricultural commodities, there is need to have an understanding of the price behaviour over time. It is said that next to rains, prices are greatest enemy of the farmer. As per price theory, prices are a function of demand and supply. But demand and supply are independently related to prices. Agriculture is being a biological industry and

mostly depends on the monsoon, supplies of agricultural commodities which are uncertain and this uncertainty in supply leads to fluctuations in prices. These fluctuations in prices of agricultural commodities are greatest obstacle in the way of agricultural development. The knowledge on the interrelations between the arrivals and prices of farm product is required for assessing the extent of price fluctuations over time. The analysis of arrivals and prices over time is important for formulating a sound agricultural price policy. The study of arrival and prices helps the farmer to find out the best time for marketing of agricultural commodities to secure higher price for their produce. Thus it helps them to take decision regarding when to sale so as to obtain maximum price. The acreage under paddy, wheat, onion, soybean, groundnut and jaggery was substantial in Kolhapur district and the arrival

of these commodities was remarkable. However, the fluctuations in arrivals and prices of these commodities were noticed in APMC, Kolhapur. But it is essential to have stability in the prices and arrivals of these commodities. The present study was undertaken with a view to examine the arrivals and prices of selected agricultural commodities in APMC, Kolhapur. The APMCs were established by state government for regulating the marketing of different kinds of agricultural produce. The market information relating to market prices and arrivals over a period of time helps the farmers to take decision about the future production pattern and sale of agricultural commodities in the market during specific period. In Maharashtra state crops are generally marketed in regulated markets, these regulated markets are called as APMC (Agriculture Produce Market Committee). Trends in arrivals and prices estimated by using appropriate statistical technique.

### Objectives :

- To study the changes of arrivals and prices of selected agricultural commodities in APMC Kolhapur market.
- To study the trends in arrival and prices of selected agricultural commodities in APMC Kolhapur market.

## MATERIALS AND METHODS :

The present study was based on the prices and arrivals of important commodities of the APMC, Kolhapur. The data pertain to a period of 11 years *i.e.* from 2001-02 to 2011-12. The secondary data pertaining to prices and arrivals of crops wheat, paddy, onion, potato, groundnut and jaggery selected in this study were collected from selected Agriculture Produce Market Committee's (APMC), Kolhapur.

### Selection of commodities :

The following commodities selected on the basis on area under crops. Two cereals, one oilseed, two vegetables and jaggery were selected for the present study. The major agricultural commodities traded in the APMC, Kolhapur for selected group were

- Cereals = Paddy, Wheat.
- Oilseeds = Groundnut.
- Vegetables = Onion, Potato.

Selected commodities	Kolhapur (000 ha)	Maharashtra (000 ha)	Per cent of Maharashtra
Paddy	112	1523	7.35
Wheat	57	1119	5.09
Onion	0.05	415	0.01
Potato	0.60	18	3.3
Groundnut	48.7	353	13.79
Sugarcane	146	1022	14.28

- Product = Jaggery.

### Analysis of data :

#### *Trends in arrivals and prices of selected agricultural commodities :*

The time series data pertaining to monthly arrivals and prices of selected agricultural commodities covering the period of eleven years (April 2001 to March 2012) was collected from APMC, Kolhapur. The compound growth rates of arrivals and prices of selected agricultural commodities was worked out by using an exponential form of equation as below :

$$Y = ab^t$$

where,

Y = Monthly arrivals/prices

a = Constant

b = Trend co-efficient

t = Time period

Annual compound growth rate (CGR) in percentage is calculated as

$$CGR (\%) = (\text{Antilog of } b-1) \times 100$$

## RESULTS AND DATA ANALYSIS :

The data on arrivals and prices of selected agricultural commodities was collected at three distinct time period *i.e.* 2001-02, 2005-06 and 2011-12.

### Wheat :

It is revealed from the table that the arrivals of wheat show severe changes in APMC, Kolhapur. In 2001-02 arrivals were 6224.4 qtls while in 2005-06 it almost double *i.e.* 14740 qtls and in 2011-12 it collapse upto 2703.1 qtls. However in case of price variation is near about same in 2001-02 and 2005-06 but in 2011-12 it was double.

### Paddy :

In case of paddy arrivals were 1908.1 qtls in 2001-02 it decreases up to 1118.7 qtls in 2005-06 while in the

year 2011-12 arrivals increases 89869 qtls. In case of prices variation is also same as pattern of arrivals *i.e.* in 2001-02 the prices were Rs. 443.95, in 2005-06 was Rs. 631.25 and in 2011-12 was Rs. 1216.67.

#### Onion :

It is revealed from that the arrivals of onion were almost doubles of previous base year 2001-02, 2005-06 and 2011-12. While in case of prices in 2001-02 (Rs. 353.77) and 2005-06 (Rs. 362.5) was near same but in 2011-12 (Rs. 700) it was double.

#### Potato :

It could be seen from the above Table 1 that the arrivals and prices of potato showed increasing trend over the years. Arrivals and prices of potato in 2001-02 was 9628.7 qtls and Rs. 606.431. In 2005-06 were 20530 qtls and Rs. 627.083. Where as in the year 2011-12 both arrivals and prices increases upto 48706 qtls and Rs.736.25.

#### Jaggery :

Jaggery is the major commodity in Kolhapur market. Arrivals and prices of jaggery in 2001-02 was 46170 qtls and Rs.1206. Increases in 2005-06 were 70541 qtls and Rs. 2054.55. Whereas in the year 2011-12 arrivals decreases and prices increases upto 67321 qtls and Rs.

3406.91.

#### Groundnut :

Arrivals and prices of groundnut in 2001-02 was 5.5 qtls and Rs. 726. In 2005-06 were 23.714 qtls and Rs. 1719.07. In the year 2011-12 both arrivals and prices increases upto 33.83 qtls and Rs. 3610.5. It could be seen from the above table that the arrivals and prices of groundnut showed increasing trend over the years.

The results of compound growth rates and co-efficient of multiple determination ( $R^2$ ) for arrivals and prices of major agricultural commodities for the period from 2001-02 to 2011-12 are estimated.

#### Wheat :

The information of compound growth rates in annual arrivals and prices of wheat. It can be revealed from the table that, the annual compound growth rate of arrivals in case of wheat (-9.61) were found negative and prices were positive (6.74). Arrivals significant at 10 per cent level and prices significant at 1 per cent level indicating thereby the arrivals of wheat decreased by 9.61 per cent per annum, prices increased 6.74 per cent per annum during period under study. The markets showed the decreased arrivals and increased prices in the period under study which may be due to the decreased demand for the wheat. APMC, Kolhapur is a consumer market it

**Table 1 : Changes of arrivals and prices of selected commodities (Arrivals in qtls and Prices in Rs.)**

Sr. No.	Commodities	2001-02		2005-06		2011-12	
		Arrivals	Prices	Arrivals	Prices	Arrivals	Prices
1.	Wheat	6224.4	1108.33	14740	1225.00	2703.1	2116.67
2.	Paddy	1908.1	443.75	1118.7	631.25	89869	1216.67
3.	Onion	36057	353.77	62889	362.5	110276	700
4.	Potato	9628.7	606.43	20530	627.083	48706	736.25
5.	Jaggery	46170	1206	70541	2054.55	67321	3406.91
6.	Groundnut	5.5	726	23.714	1719.07	33.833	3610.5

**Table 2 : Trends in annual arrivals and prices of major agricultural commodities**

Crops	Arrivals		Prices	
	CGR (%)	't' value	CGR (%)	't' value
Wheat	-9.61*	-2.149	6.74***	11.07
Paddy	65.77***	5.642	10.54***	35.77
Onion	5.54*	2.802	15.90***	5.26
Potato	13.35 <sup>NS</sup>	7.782	6.18**	2.72
Groundnut	0.92***	0.111	11.15***	4.17
Jaggery	5.19**	2.904	10.48***	4.94

\*, \*\* and \*\*\* indicate significance of values at P=0.10, 0.05 and 0.01, respectively

is not producer market for wheat.

### **Paddy :**

The annual compound growth rate of arrivals in case of paddy (65.77) were found positive and prices were also positive (10.54). Arrivals and prices both were significant at 1 per cent level indicating thereby the arrivals of paddy increased by 65.77 per cent per annum and prices increased 10.54 per cent per annum during period under study. APMC, Kolhapur is a producer market for paddy. The markets showed the increased arrivals and prices in the period under study which may be due to the increased demand for the paddy for processing and consumption purpose. Also increased the production of paddy in area under study.

### **Onion :**

The annual compound growth rate of arrivals in case of onion (5.54) were found positive and prices were also positive (15.90). Arrivals were significant at 10 per cent level and prices were significant at 1 per cent level indicating thereby the arrivals of onion increased by 5.54 per cent per annum and prices increased 15.90 per cent per annum during period under study. Onion is the price sensitive and seasonal nature commodity. The markets showed the increased arrivals and prices in the period under study the reason for may be due to the increased demand for the onion for consumption purpose and also increased the production in the producer's region of onion.

### **Potato :**

In case of potato, the annual compound growth rate of arrivals were found positive (13.35) and prices were also positive (6.18). Arrivals were non-significant and prices were significant at 5 per cent level both indicating thereby the arrivals of potato increased by 13.35 per cent per annum and prices increased 6.18 per cent per annum during period under study. The markets showed the increased arrivals and prices in the period under study which may be due to the increased demand for the potato for consumption purpose and also increased the production in the producer's region of potato.

### **Groundnut :**

The annual compound growth rate of arrivals in case of groundnut (0.92) were found positive and prices were also positive (11.15). Arrivals were significant at 1 per cent level and prices also significant at 1 per cent level

both indicating thereby the arrivals of groundnut increased by 0.92 per cent per annum and prices increased 11.15 per cent per annum during period under study. The markets showed the decreased arrivals and increased prices in the period under study which may be due to the decreased demand for the groundnut.

### **Jaggery :**

The annual compound growth rate of arrivals in case of jaggery (5.19) were found positive and prices were also positive (10.48). Arrivals were significant at 5 per cent level and prices were significant at 1 per cent level both indicating thereby the arrivals of jaggery increased by 5.19 per cent per annum and prices increased 10.48 per cent per annum during period under study. APMC, Kolhapur is producer market for jaggery. The markets showed the increased arrivals and prices in the period under study which may be due to the increased demand for the jaggery and increased the production of jaggery.

### **Wheat :**

The annual compound growth rate of arrivals in case of wheat (-9.61) were found negative and prices were positive (6.74). Arrivals significant at 10 per cent level and prices significant at 1 per cent level indicating thereby the arrivals of wheat decreased by 9.61 per cent per annum, prices increased 6.74 per cent per annum during period under study.

### **Paddy :**

The annual compound growth rate of arrivals in case of paddy (65.77) were found positive and prices were also positive (10.54). Arrivals and prices both were significant at 1 per cent level indicating there by the arrivals of paddy increased by 65.77 per cent per annum and prices increased 10.54 per cent per annum during period under study.

### **Onion :**

The annual compound growth rate of arrivals in case of onion (5.54) were found positive and prices were also positive (15.90). Arrivals were significant at 10 per cent level and prices were significant at 1 per cent level indicating there by the arrivals of onion increased by 5.54 per cent per annum and prices increased 15.90 per cent per annum during period under study.

### **Potato :**

The annual compound growth rate of arrivals in case

of potato (13.35) were found positive and prices were also positive (6.18). Arrivals were non-significant and prices were significant at 5 per cent level both indicating there by the arrivals of potato increased by 13.35 per cent per annum and prices increased 6.18 per cent per annum during period under study.

### Groundnut :

The annual compound growth rate of arrivals in case of groundnut (0.92) were found positive and prices were also positive (11.15). Arrivals were significant at 5 per cent level and prices were significant at 1 per cent level both indicating thereby the arrivals of groundnut increased by 0.92 per cent per annum and prices increased 11.15 per cent per annum during period under study.

### Jaggery :

The annual compound growth rate of arrivals in case of jaggery (5.19) were found positive and prices were also positive (10.48). Arrivals were significant at 5 per cent level and prices were significant at 1 per cent level both indicating there by the arrivals of jaggery increased by 5.19 per cent per annum and prices increased 10.48 per cent per annum during period under study.

### Conclusion :

– The significant increase in arrivals of paddy whereas; significant decrease in arrivals of wheat was noticed in the APMC, Kolhapur.

– The prices of wheat, paddy, onion, potato, groundnut and jaggery increased significantly during the period under study.

– The inverse relationship between arrivals and prices was noticed for wheat, jaggery and groundnut which indicated that the increase in arrivals lowered the prices of these commodities. Whereas, positive relationship in arrivals and prices was noticed for paddy, onion and potato observed in APMC, Kolhapur.

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